

## CLAIMS

1. A polypeptide having a thermostable ribonuclease H activity, selected from the group consisting  
5 of:

(a) a polypeptide having the amino acid sequence of SEQ ID NO:1;

(b) a polypeptide having an amino acid sequence in which at least one amino acid residue is deleted, added,  
10 inserted or substituted in the amino acid sequence of SEQ ID NO:1; and

(c) a polypeptide having an amino acid sequence that shares at least 54% homology with the amino acid sequence of SEQ ID NO:1.

15 2. A nucleic acid encoding a polypeptide having a thermostable ribonuclease H activity, selected from the group consisting of:

(a) a nucleic acid encoding a polypeptide having the amino acid sequence of SEQ ID NO:1;

20 (b) a nucleic acid encoding a polypeptide having an amino acid sequence in which at least one amino acid residue is deleted, added, inserted or substituted in the amino acid sequence of SEQ ID NO:1;

(c) a nucleic acid encoding a polypeptide having  
25 an amino acid sequence that shares at least 54% homology

with the amino acid sequence of SEQ ID NO:1;

(d) a nucleic acid having the nucleotide sequence of SEQ ID NO:2;

5 (e) a nucleic acid consisting of a nucleotide sequence in which at least one nucleotide is deleted, added, inserted or substituted in the nucleotide sequence of SEQ ID NO:2 such that the deletion, addition, insertion or substitution of the nucleotide results in translation into an amino acid sequence;

10 (f) a nucleic acid capable of hybridizing to any one of the nucleic acids of (a) to (d) or complementary strands thereof under stringent conditions; and

(g) a nucleic acid having a nucleotide sequence that shares at least 61% homology with the nucleotide  
15 sequence of SEQ ID NO:2.

3. A recombinant DNA comprising the nucleic acid defined by claim 2.

4. A transformant transformed with the recombinant DNA defined by claim 3.

20 5. A method for producing a polypeptide having a thermostable ribonuclease H activity, the method comprising:

culturing the transformant defined by claim 4;  
and

25 collecting a polypeptide having a thermostable

ribonuclease H activity from the culture.

6. A polypeptide having a thermostable  
ribonuclease H activity, obtainable by culturing a  
transformant into which a plasmid pApr108 harbored by  
5 *Escherichia coli* HMS174/pApr108 (deposited under accession  
no. FERM BP-8433) is transferred.